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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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BARNES & THORNBURG LLP P.O. BOX 2786 CHICAGO, IL 60690-2786			HICKS, MICHAEL J	
			ART UNIT	PAPER NUMBER
			2165	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/741,516	Applicant(s) O'ROURKE ET AL.	
	Examiner Michael J. Hicks	Art Unit 2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-24 Pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-24 rejected under 35 U.S.C. 102(b) as being anticipated by Gokhale et al. ("Reinventing the Wheel? CORBA vs. Web Services", In Proceedings International WWW Conference(11), Honolulu, Hawaii, USA, July 2002 and referred to hereinafter as Gokhale).

As per Claim 1, 11, and 12, Gokhale discloses a computer program product, server (e.g. system), and method of providing a client computer with remote access to an application controlled by a server across a data network (i.e. *"The Common Object Request Broker Architecture (CORBA) is an open standard for distributed object computing defined by the Object Management Group (OMG). CORBA is an object bus enabling the client to invoke methods on remote objects at the server independent of the language the objects have been written in, and their location. The interaction between client and server is mediated by object request brokers (ORBs) on both the client and server sides, communicating typically via IIOP (Internet Inter-ORB Protocol)...Telecommunication equipment vendors such as Lucent and Nokia are using CORBA to develop and produce telecommunication products enabling service providers to rapidly create, deploy,*

and manage value added services based on a common Intelligent Network (IN) architecture." The preceding text excerpt along with Table 1 clearly indicates that services (e.g. applications) on a server are provided to clients located at a remote location. Table 1 shows example of some of these applications.) (Table 1; Page 3, Paragraph 1; Page 4, Paragraph 4) without maintaining a dedicated communications channel between the client and the server (i.e. *"For deployment architectures with firewalls, SOAP is the best choice so far, mainly due to the fact that HTTP is the preferred transport for SOAP. Since HTTP is associated with a well defined port, most firewalls have been configured to accept HTTP traffic. SOAP messages can piggy-back on HTTP messages, and can hence can tunnel through firewalls."* The preceding text excerpt clearly indicates that the messages between the client and the server may be piggybacked on HTTP messages. This indicates that there is no dedicated communications channel between the client and there server, but a communication channel between the client and a network (e.g. the means of communication that the HTTP messages are using) is used to access the server.) (Page 13, Paragraph 2), comprising the steps of: a) providing a network addressable server-side service which executes one or more predefined procedures to control said application in response to predefined application control commands received by the server over the network (i.e. *"The CORBA standard defines an Interface Repository (IR) that provides run-time information about IDL interfaces. At run-time clients can use the IR to discover the operations that can be performed on an object, and make invocations on it using the Dynamic Invocation Interface (DII). The CORBA standard also defines an Implementation Repository that contains information that allows an ORB to activate servers to process a request, along with other server-specific information such as administrative control, resource allocation, security, and activation modes."* The preceding text excerpt clearly indicates that a server side service is provided which executes commands on the application in response to invocation made from remote clients, which are received over the network.) (Page 10, Paragraph 3); b) providing a definition of said application control commands, said definition being accessible over the data network by a client to enable

Art Unit: 2165

the client to provide an interface which formulates said predefined commands and addresses said commands to the server-side service in response to inputs to the client (i.e. *"The specifications (i.e., interface) of services can be described using WSDL (Web Services Description Language). WSDL is a general framework (based on XML) for describing network services as collections of communication endpoints capable of exchanging messages. It describes where a service is located, what operations are supported, and the format of the messages to be exchanged based on how the service is invoked. WSDL does not mandate a specific communication protocol used (it supports various bindings such as SOAP and HTTP)."* The preceding text excerpt clearly indicates that the application control commands (e.g. the definition of an interface for the application which also defines operations/commands for the application) exists.) (Page 5, Paragraph 4), c) providing instructions accessible over the data network by the client which define a network addressable client-side service which executes one or more predefined procedures to generate notifications on the client in response to predefined notification commands received by the client over the network (i.e. *"The specifications (i.e., interface) of services can be described using WSDL (Web Services Description Language). WSDL is a general framework (based on XML) for describing network services as collections of communication endpoints capable of exchanging messages. It describes where a service is located, what operations are supported, and the format of the messages to be exchanged based on how the service is invoked. WSDL does not mandate a specific communication protocol used (it supports various bindings such as SOAP and HTTP)...Second, the interaction between client and server can be done directly, with no need for further intermediation (except from the ORB of course). The client obtains a handle to a CORBA object and applies a method on the it. The result of the call is possibly another CORBA object on which it can apply further methods."* The preceding text excerpt clearly indicates that the client, using the definition of the client side service, is able to respond to notification generation commands from the server by generating notifications on the client (e.g. receiving the result of the call, and generating another call in response).) (Page 5, Paragraph 4; Page 8, Paragraph

Art Unit: 2165

2); and d) providing on the server an interface between the application and the data network which is effective to issue one or more of said notification generation

commands in response to notifications of events received from the application (i.e.

"Second, the interaction between client and server can be done directly, with no need for further intermediation (except from the ORB of course). The client obtains a handle to a CORBA object and applies a method on the it. The result of the call is possibly another CORBA object on which it can apply further methods." The preceding text excerpt clearly indicates that the server includes an interface which

is able to notify the client of notification generation command in response to event which occur in the application (e.g. responding to the client with the result of the call, which may generate another call).)

(Page 8, Paragraph 2); whereby the server-side service provides a network addressable control service to enable the client to control said application on the server (i.e. *"CORBA is an object bus enabling the client to invoke methods on remote objects at the server independent of the language the objects have been written in, and their location."* The preceding text excerpt clearly indicates that the client is able to control methods in the application located on the server.) (Page 3,

Paragraph 1), and the client-side service provides a network addressable notification service to enable the server to notify the client of events occurring in the application (i.e.

"The client sends a message and receives a message." The preceding text excerpt clearly indicates that a message passing system is in place which would allow the server to notify the client of any changes in the application.) (Page 8, Paragraph 3).

As per Claims 2 and 14, Gokhale discloses said server-side service and said client-side service are each provided as web services between a provider and a remote consumer, the consumer of the server-side service being the client interface and the consumer of the client-side service being the server interface (i.e. *"In CORBA, there is a tight*

coupling between the client and the server. First, both must share the same interface -- with a stub on the client-side and the corresponding skeleton on the server-side -- and must run an ORB at both ends. Second, the interaction between client and server can be done directly, with no need for further intermediation (except from the ORB of course). The client obtains a handle to a CORBA object and applies a method on the it. The result of the call is possibly another CORBA object on which it can apply further methods." The preceding text excerpt clearly indicates that the server side service and the client side service act as consumers towards each other, with the consumer of the client side service being the server, and the consumer of the server-side service being the client.) (Page 8, Paragraph 2).

As per Claims 3 and 15, Gokhale discloses the definition of said application control commands is a web services description language (WSDL) file provided on the server (i.e. *"The specifications (i.e., interface) of services can be described using WSDL (Web Services Description Language). WSDL is a general framework (based on XML) for describing network services as collections of communication endpoints capable of exchanging messages. It describes where a service is located, what operations are supported, and the format of the messages to be exchanged based on how the service is invoked. WSDL does not mandate a specific communication protocol used (it supports various bindings such as SOAP and HTTP)."* The preceding text excerpt clearly indicates that the application control commands may be defined in a WSDL file, which is located on the server.) (Page 5, Paragraph 4).

As per Claims 4 and 16, Gokhale discloses said WSDL file includes said instructions which define said client-side web service (i.e. *"The specifications (i.e., interface) of services can be described using WSDL (Web Services Description Language). WSDL is a general framework (based on XML) for describing network services as collections of communication endpoints capable of exchanging messages. It describes where a service is located, what operations are supported,*

Art Unit: 2165

and the format of the messages to be exchanged based on how the service is invoked. WSDL does not mandate a specific communication protocol used (it supports various bindings such as SOAP and HTTP)." The preceding text excerpt clearly indicates that the WSDL file includes instructions which describe the location, operations, and format of messaging for the client-side web service.) (Page 5, Paragraph 4).

As per Claims 5 and 17, Gokhale discloses said WSDL file includes instructions for the client to access said instructions which define said client-side web service over the network (i.e. *"The specifications (i.e., interface) of services can be described using WSDL (Web Services Description Language). WSDL is a general framework (based on XML) for describing network services as collections of communication endpoints capable of exchanging messages. It describes where a service is located, what operations are supported, and the format of the messages to be exchanged based on how the service is invoked. WSDL does not mandate a specific communication protocol used (it supports various bindings such as SOAP and HTTP).*" The preceding text excerpt clearly indicates that the WSDL file includes instructions which describe the location, and communications means of the application (e.g. instructions for the client to access said instructions over the network.) (Page 5, Paragraph 4).

As per Claims 6 and 18, Gokhale discloses said application is a computer telephone integration (CTI) application in communication with a telephony network (i.e. *"Telecommunication equipment vendors such as Lucent and Nokia are using CORBA to develop and produce telecommunication products enabling service providers to rapidly create, deploy, and manage value added services based on a common Intelligent Network (IN) architecture. Such products need to communicate with a large number of disparate telephony network elements."* The preceding text excerpt clearly indicates that the application can be a CTI in communication with a telephony network. Note that

Art Unit: 2165

the fact that the application is a CTI is a statement of intended use and will not be given patentable weight. The citation was merely pointed out to illustrate that such an application was already known in the art at the time of Applicants' invention.) (Page 4, Paragraph 4), whereby the interface on the client enables a user of the client to control a device on said telephony network and the interface on the server enables the CTI application to issue notifications of telephony network events or state changes relating to the device to the user of the client (i.e.

"Telecommunication equipment vendors such as Lucent and Nokia are using CORBA to develop and produce telecommunication products enabling service providers to rapidly create, deploy, and manage value added services based on a common Intelligent Network (IN) architecture. Such products need to communicate with a large number of disparate telephony network elements." The preceding text excerpt clearly indicates that the telephony network elements are used to manage the events of a telephony network. Note that the purpose of the CTI is a statement of intended use and will not be given patentable weight. The citation was merely pointed out to illustrate that such an application was already known in the art at the time of Applicants' invention.) (Page 4, Paragraph 4).

As per Claims 7 and 19, Gokhale discloses said data network is a packet switching network employing the transport communication protocol/internet protocol (TCP/IP) method of addressing packets from the client to the server and vice versa (i.e.

"Moreover, the communication protocols used by CORBA for ORB communication include TCP/IP, IPX/SPX, ATM, etc." The preceding text excerpt clearly indicates that the communications protocol could be TCP/IP.) (Page 3, Paragraph 2).

As per Claims 8 and 20, Gokhale discloses the data network is selected from a local area network, a wide area network, and the Internet (i.e. *"Web services are an emerging*

distributed middleware technology that uses a simple XML-based protocol to allow applications to exchange data across the Web." The preceding text excerpt clearly indicates that the data network is the Internet.) (Page 5, Paragraph 1).

As per Claim 9, Gokhale discloses said server is a web server running said application (i.e. *"The interaction between client and server is mediated by object request brokers (ORBs) on both the client and server sides, communicating typically via IIOP (Internet Inter-ORB Protocol)."*¹ CORBA objects can be either collocated with the client or distributed on a remote server, without affecting their implementation or use." The preceding text excerpt clearly indicates that the application may be located on the server.) (Page 3, Paragraph 1).

As per Claim 10, Gokhale discloses said server is a web server and said application runs on a computer in communication with said server (i.e. *"The interaction between client and server is mediated by object request brokers (ORBs) on both the client and server sides, communicating typically via IIOP (Internet Inter-ORB Protocol)."*¹ CORBA objects can be either collocated with the client or distributed on a remote server, without affecting their implementation or use." The preceding text excerpt clearly indicates that the application may be located on the client.) (Page 3, Paragraph 1).

As per Claims 13, 21, and 22, Gokhale discloses a computer program product, client (e.g. system), and method of remotely controlling an application from a client computer across a data network, said application being under the local control of a server on the data network (i.e. *"The Common Object Request Broker Architecture (CORBA) is an open standard for distributed object computing defined by the Object Management Group (OMG).*

CORBA is an object bus enabling the client to invoke methods on remote objects at the server independent of the language the objects have been written in, and their location. The interaction between client and server is mediated by object request brokers (ORBs) on both the client and server sides, communicating typically via IIOP (Internet Inter-ORB Protocol)...Telecommunication equipment vendors such as Lucent and Nokia are using CORBA to develop and produce telecommunication products enabling service providers to rapidly create, deploy, and manage value added services based on a common Intelligent Network (IN) architecture." The preceding text excerpt along with Table 1 clearly indicates that services (e.g. applications) on a server are provided to clients located at a remote location. Table 1 shows example of some of these applications.) (Table 1; Page 3, Paragraph 1; Page 4, Paragraph 4), without maintaining a dedicated communications channel between the client and the server (i.e. *"For deployment architectures with firewalls, SOAP is the best choice so far, mainly due to the fact that HTTP is the preferred transport for SOAP. Since HTTP is associated with a well defined port, most firewalls have been configured to accept HTTP traffic. SOAP messages can piggyback on HTTP messages, and can hence can tunnel through firewalls."* The preceding text excerpt clearly indicates that the messages between the client and the server may be piggybacked on HTTP messages. This indicates that there is no dedicated communications channel between the client and there server, but a communication channel between the client and a network (e.g. the means of communication that the HTTP messages are using) is used to access the server.) (Page 13, Paragraph 2), comprising the steps of: a) receiving from the server a definition of application control commands which cause a network addressable server-side service to execute one or more predefined procedures to control said application (i.e. *"The specifications (i.e., interface) of services can be described using WSDL (Web Services Description Language). WSDL is a general framework (based on XML) for describing network services as collections of communication endpoints capable of exchanging messages. It describes where a service is located, what operations are supported, and the format of the messages to be exchanged based on how the service is invoked. WSDL does not mandate a specific communication protocol used (it supports various bindings such as SOAP and*

HTTP)." The preceding text excerpt clearly indicates that the application control commands (e.g. the definition of an interface for the application which also defines operations/commands for the application) exists.) (Page 5, Paragraph 4); b) providing on the client an interface based on said definition which formulates said predefined commands and addresses said commands to the server-side service in response to inputs to the client (i.e. *"The specifications (i.e., interface) of services can be described using WSDL (Web Services Description Language). WSDL is a general framework (based on XML) for describing network services as collections of communication endpoints capable of exchanging messages. It describes where a service is located, what operations are supported, and the format of the messages to be exchanged based on how the service is invoked. WSDL does not mandate a specific communication protocol used (it supports various bindings such as SOAP and*

HTTP)." The preceding text excerpt clearly indicates that the application control commands (e.g. the definition of an interface for the application which also defines operations/commands for the application) exists.) (Page 5, Paragraph 4); c) receiving instructions over the data network which define a network addressable client-side service which executes one or more predefined procedures to generate notifications on the client in response to predefined notification commands received by the client over the network (i.e. *"Second, the interaction between client and server can be done directly, with no need for further intermediation (except from the ORB of course). The client obtains a handle to a CORBA object and applies a method on the it. The result of the call is possibly another CORBA object on which it can apply further methods."* The preceding text excerpt clearly indicates that the client includes an interface which is able to monitor the receipt of and respond to notification generation commands from the server by generating notifications on the client (e.g. receiving the result of the call, and generating another call in response).) (Page 8, Paragraph 2); and d) providing on the client said network addressable client-side service which monitors for receipt of said notification generation commands and which generates said notifications on the client in response thereto (i.e. *"Second, the interaction between client and server can be*

done directly, with no need for further intermediation (except from the ORB of course). The client obtains a handle to a CORBA object and applies a method on the it. The result of the call is possibly another CORBA object on which it can apply further methods." The preceding text excerpt clearly indicates that the client includes an interface which is able to monitor the receipt of and respond to notification generation commands from the server by generating notifications on the client (e.g. receiving the result of the call, and generating another call in response.) (Page 8, Paragraph 2); whereby the server-side service provides a network addressable control service to enable the client to control said application on the server (i.e. *"CORBA is an object bus enabling the client to invoke methods on remote objects at the server independent of the language the objects have been written in, and their location."* The preceding text excerpt clearly indicates that the client is able to control methods in the application located on the server.) (Page 3, Paragraph 1), and the client-side service provides a network addressable notification service to enable the server to notify the client of events occurring in the application (i.e. *"The client sends a message and receives a message."* The preceding text excerpt clearly indicates that a message passing system is in place which would allow the server to notify the client of any changes in the application.) (Page 8, Paragraph 3).

As per Claim 23, Gokhale discloses a system comprising a client and a server connected across a data network, the client and the server each being provided with a storage area for storing instructions to allow asynchronous interaction between the client and server, and the server having control of an application (i.e. *"The CORBA standard defines an Interface Repository (IR) that provides run-time information about IDL interfaces. At run-time clients can use the IR to discover the operations that can be performed on an object, and make invocations on it using the Dynamic Invocation Interface (DII). The CORBA standard also defines an Implementation Repository that contains information that allows an ORB to activate servers to process a*

request, along with other server-specific information such as administrative control, resource allocation, security, and activation modes...In Web services, everything is decoupled. The client sends a message and receives a message. The response does not give an immediate access to the next step." The preceding text excerpt clearly indicates that storage regions for the instructions are provided on the client and the server and that the communication is asynchronous.) (Page 8, Paragraph 3; Page 10, Paragraph 3), wherein: (I) the storage area of the server stores instructions which when executed are effective to cause the server to: a) provide a network addressable server-side service which executes one or more predefined procedures to control said application in response to predefined application control commands received by the server over the network (i.e. *"The CORBA standard defines an Interface Repository (IR) that provides run-time information about IDL interfaces. At run-time clients can use the IR to discover the operations that can be performed on an object, and make invocations on it using the Dynamic Invocation Interface (DII). The CORBA standard also defines an Implementation Repository that contains information that allows an ORB to activate servers to process a request, along with other server-specific information such as administrative control, resource allocation, security, and activation modes."* The preceding text excerpt clearly indicates that a server side service is provided which executes commands on the application in response to invocation made from remote clients, which are received over the network.) (Page 10, Paragraph 3); b) provide a definition of said application control commands, said definition being accessible over the data network by the client to enable the client to provide an interface which formulates said predefined commands and addresses said commands to the server-side service in response to inputs to the client (i.e. *"The specifications (i.e., interface) of services can be described using WSDL (Web Services Description Language). WSDL is a general framework (based on XML) for describing network services as collections of communication endpoints capable of exchanging messages. It describes where a service is located, what operations are supported, and the format of the messages to be exchanged based on how the service is invoked. WSDL*

does not mandate a specific communication protocol used (it supports various bindings such as SOAP and HTTP)." The preceding text excerpt clearly indicates that the application control commands (e.g. the definition of an interface for the application which also defines operations/commands for the application) exists.) (Page 5, Paragraph 4); c) provide instructions accessible over the data network by the client which define a network addressable client-side service which executes one or more predefined procedures to generate notifications on the client in response to predefined notification commands received by the client over the network (i.e. "The specifications (i.e., interface) of services can be described using WSDL (Web Services Description Language). WSDL is a general framework (based on XML) for describing network services as collections of communication endpoints capable of exchanging messages. It describes where a service is located, what operations are supported, and the format of the messages to be exchanged based on how the service is invoked. WSDL does not mandate a specific communication protocol used (it supports various bindings such as SOAP and HTTP)...Second, the interaction between client and server can be done directly; with no need for further intermediation (except from the ORB of course). The client obtains a handle to a CORBA object and applies a method on the it. The result of the call is possibly another CORBA object on which it can apply further methods." The preceding text excerpt clearly indicates that the client, using the definition of the client side service, is able to respond to notification generation commands from the server by generating notifications on the client (e.g. receiving the result of the call, and generating another call in response).) (Page 5, Paragraph 4; Page 8, Paragraph 2); and d) provide on the server an interface between the application and the data network which is effective to issue one or more of said notification generation commands in response to notifications of events received from the application (i.e. "Second, the interaction between client and server can be done directly, with no need for further intermediation (except from the ORB of course). The client obtains a handle to a CORBA object and applies a method on the it. The result of the call is possibly another CORBA object on which it can apply further methods." The preceding text excerpt

Art Unit: 2165

clearly indicates that the server includes an interface which is able to notify the client of notification generation command in response to event which occur in the application (e.g. responding to the client with the result of the call, which may generate another call).) (Page 8, Paragraph 2); and (II) the storage area of the client stores instructions which when executed are effective to cause the client to: a) receive from the server across the network said definition of application control commands (i.e. *"The specifications (i.e., interface) of services can be described using WSDL (Web Services Description Language). WSDL is a general framework (based on XML) for describing network services as collections of communication endpoints capable of exchanging messages. It describes where a service is located, what operations are supported, and the format of the messages to be exchanged based on how the service is invoked. WSDL does not mandate a specific communication protocol used (it supports various bindings such as SOAP and HTTP)." The preceding text excerpt clearly indicates that the application control commands (e.g. the definition of an interface for the application which also defines operations/commands for the application) exists, and must exist on the client in order for the client to utilize the interface.) (Page 5, Paragraph 4); b) provide on the client an interface based on said definition which formulates said predefined commands and addresses said commands to the server-side service in response to inputs to the client (i.e. *"The specifications (i.e., interface) of services can be described using WSDL (Web Services Description Language). WSDL is a general framework (based on XML) for describing network services as collections of communication endpoints capable of exchanging messages. It describes where a service is located, what operations are supported, and the format of the messages to be exchanged based on how the service is invoked. WSDL does not mandate a specific communication protocol used (it supports various bindings such as SOAP and HTTP)." The preceding text excerpt clearly indicates that the application control commands (e.g. the definition of an interface for the application which also defines operations/commands for the application) exists, and must exist on the client in order for the client to utilize the interface.) (Page 5, Paragraph 4); c) receive over the data network said instructions**

which define a network addressable client-side service (i.e. *"The specifications (i.e., interface) of services can be described using WSDL (Web Services Description Language). WSDL is a general framework (based on XML) for describing network services as collections of communication endpoints capable of exchanging messages. It describes where a service is located, what operations are supported, and the format of the messages to be exchanged based on how the service is invoked. WSDL does not mandate a specific communication protocol used (it supports various bindings such as SOAP and HTTP)..."*Second, the interaction between client and server can be done directly, with no need for further intermediation (except from the ORB of course). The client obtains a handle to a CORBA object and applies a method on the it. The result of the call is possibly another CORBA object on which it can apply further methods."

The preceding text excerpt clearly indicates that the client receives instructions which define the service and includes an interface which is able to monitor the receipt of and respond to notification generation commands from the server by generating notifications on the client (e.g. receiving the result of the call, and generating another call in response).) (Page 5, Paragraph 4; Page 8, Paragraph 2); and d) provide on the client said network addressable client-side service which monitors for receipt of said notification generation commands and which generates said notifications on the computer in response thereto (i.e. *"Second, the interaction between client and server can be done directly, with no need for further intermediation (except from the ORB of course). The client obtains a handle to a CORBA object and applies a method on the it. The result of the call is possibly another CORBA object on which it can apply further methods."* The preceding text excerpt clearly indicates that the client includes an interface which is able to monitor the receipt of and respond to notification generation commands from the server by generating notifications on the client (e.g. receiving the result of the call, and generating another call in response).) (Page 8, Paragraph 2); whereby the server-side service provides a network addressable control service to enable the client to control said application on the computer (i.e. *"CORBA is an object bus enabling the client to invoke methods on remote objects at the server independent of the language the objects have been*

written in, and their location." The preceding text excerpt clearly indicates that the client is able to control methods in the application located on the server.) (Page 3, Paragraph 1), and the client-side service provides a network addressable notification service to enable the server to notify the client of events occurring in the application (i.e. *"The client sends a message and receives a message."* The preceding text excerpt clearly indicates that a message passing system is in place which would allow the server to notify the client of any changes in the application.) (Page 8, Paragraph 3), without maintaining a dedicated communications channel between the remote client and the computer (i.e. *"For deployment architectures with firewalls, SOAP is the best choice so far, mainly due to the fact that HTTP is the preferred transport for SOAP. Since HTTP is associated with a well defined port, most firewalls have been configured to accept HTTP traffic. SOAP messages can piggy-back on HTTP messages, and can hence can tunnel through firewalls."* The preceding text excerpt clearly indicates that the messages between the client and the server may be piggybacked on HTTP messages. This indicates that there is no dedicated communications channel between the client and there server, but a communication channel between the client and a network (e.g. the means of communication that the HTTP messages are using) is used to access the server.) (Page 13, Paragraph 2).

As per Claim 24, Gokhale discloses a method of providing an asynchronous interaction between a client and a server (i.e. *"In Web services, everything is decoupled. The client sends a message and receives a message. The response does not give an immediate access to the next step."* The preceding text excerpt clearly indicates that the communication is asynchronous.) (Page 8, Paragraph 3), comprising the steps of providing Web Services on the server to be consumed by the client and providing Web Services on the client to be consumed by the server (i.e. *"In CORBA, there is a tight coupling between the client and the server. First, both must*

share the same interface -- with a stub on the client-side and the corresponding skeleton on the server-side -- and must run an ORB at both ends. Second, the interaction between client and server can be done directly, with no need for further intermediation (except from the ORB of course). The client obtains a handle to a CORBA object and applies a method on the it. The result of the call is possibly another CORBA object on which it can apply further methods." The preceding text excerpt clearly indicates that the server side service and the client side service act as consumers towards each other, with the consumer of the client side service being the server, and the consumer of the server-side service being the client.) (Page 8, Paragraph 2), whereby each of the client and server acts as both a Web Services provider and a Web Services consumer (i.e. *"In CORBA, there is a tight coupling between the client and the server. First, both must share the same interface -- with a stub on the client-side and the corresponding skeleton on the server-side -- and must run an ORB at both ends. Second, the interaction between client and server can be done directly, with no need for further intermediation (except from the ORB of course). The client obtains a handle to a CORBA object and applies a method on the it. The result of the call is possibly another CORBA object on which it can apply further methods."* The preceding text excerpt clearly indicates that the server side service and the client side service act as consumers towards each other, with the consumer of the client side service being the server, and the consumer of the server-side service being the client.) (Page 8, Paragraph 2), such that when acting as a consumer each can notify the other of events asynchronously by invoking a Web Services command (i.e. *"In Web services, everything is decoupled. The client sends a message and receives a message. The response does not give an immediate access to the next step."* The preceding text excerpt clearly indicates that the notification are asynchronous and invoked by a web service command.) (Page 8, Paragraph 3), and wherein said asynchronous interaction is provided without maintaining a dedicated communications channel (i.e. *"For deployment architectures with firewalls, SOAP is the best choice so far, mainly due to the fact that HTTP is the preferred transport for SOAP. Since HTTP is associated with a well defined port, most firewalls have been configured to*

accept HTTP traffic. SOAP messages can piggy-back on HTTP messages, and can hence can tunnel through firewalls." The preceding text excerpt clearly indicates that the messages between the client and the server may be piggybacked on HTTP messages. This indicates that there is no dedicated communications channel between the client and there server, but a communication channel between the client and a network (e.g. the means of communication that the HTTP messages are using) is used to access the server.) (Page 13, Paragraph 2).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on (571) 272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Application/Control Number: 10/741,516
Art Unit: 2165

Page 20

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